

DIAMOND  
COATINGS



**Diamox AR1617**  
PET Film  
With  
Anti-Reflection Coating

**Diamond Coatings Ltd – West Midlands (UK)**

**And**

**Diamond Coatings Inc - Arizona (USA)**

## Introduction

Diamond Coatings, a privately owned group of companies, is a recognised leader in the production and manufacture of vacuum coatings, which include transparent conductive coatings (our Diamox ITO range – Indium Tin Oxide) and optical coatings (our Diamox AR range – Eg: Broadband AR or V coat, 3DAR for Cinema application, Beam Splitter, etc).

Our AR coatings are individually designed and fine-tuned, to be deposited onto both glass and plastic, to meet your specific requirements and specifications.

In addition to our specialist coatings, Diamond Coatings also offer a wide range of coated films and we have now extended our film product range, to offer a high quality Anti-Reflective (AR) film, which we can provide by sheet, roll or directly laminated on your chosen substrate.

Our Diamox AR1617 film offers an enhanced level of higher transparency and is suitable for LCD's, PDP's, clear displays and touch panels, amongst others.

An additional benefit to our Diamox AR1617 Film is that it also boasts excellent Anti-Static and abrasion resistance properties, as well as being an anti chemical material, all of which contribute to our film's great performance. (See below)

## Coating Layer Structure

Protective Film (PE)  
AR coating  
Hard Coat with Anti-Static  
PET 100 microns  
Optically Clear Adhesive 20 microns  
Protective Film (PE)



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### Properties

Product name	<b>Diamox AR1617 Film</b>	
Substrate	<b>Polyester film - 100µm</b>	
		Method of Testing
Minimum reflection at 580-590nm	0.59% (588nm)	Note 1
Luminous reflection	0.74%	Note 1
Reflective colour		Note 1
x	0.233	
y	0.191	
Total luminous transmission	94.4%	Note 2
Haze	0.1%	Note 2
Surface resistivity	$7 \times 10^{10}$ Ohms / sq	Note 3
Cross cut test	Good	Note 4
Pencil hardness	2-3H	750g
Abrasion resistance by steel wool	A	Note 5
PSA Peel test	8.0 N/25mm No residual adhesive agent	Note 6

- Note 1                      UV-VIS-NIR Spectrophotometer - Absolute reflectance (5Deg incidence)
- Note 2                      Apply to 1mm float glass - Haze Meter
- Note 3                      Surface resistivity meter - HR type probe
- Note 4                      Scotch tape peeling on AR coated Layer
- Note 5                      Steel wool 200g/cm<sup>2</sup> load
- Scratch
- 0 - 5: A**
- 5 - 20: B**
- > 20 : C**
- Note 6                      180Deg peel method



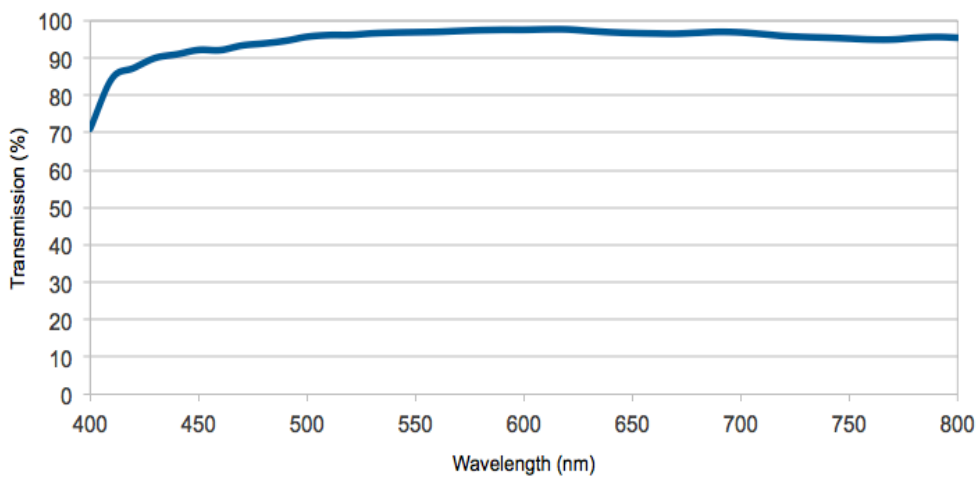


### Transmission and Reflection of Diamox AR1617 Film

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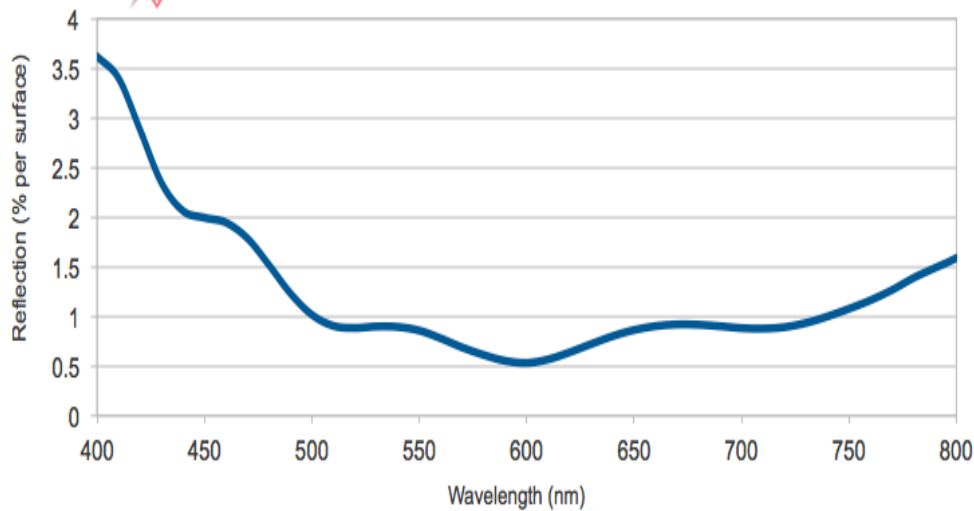
Transmission of part AR coated both sides



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Reflection of part AR coated per side



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### Contact angle

Test sample	Contact angle
Pure Water	103Deg
Oleic acid	59Deg

### Environmental Testing

Test sample	Result	Test method
Heat	Unchanged	103Deg – 500 Hours
Cycling Test	Unchanged	-30DegC to +60DegC – 50 times
Humidity	Unchanged	60DegC – 90% RH – 500 Hours

### Chemicals resistance

Test Condition:

Deposit a drop of test sample on film surface, wipe the drop after 30 minutes and check the surface. These tests have not been done by an independent laboratory and are to be used for information only.

Test sample	Result
Glass Cleaner	Unchanged
Alcohol	Unchanged
Acetone	Unchanged
Kitchen cleaner 5% aq.sol.	Unchanged
NaOH 1% aq.sol.	Unchanged
NH4OH 3% ap.sol.	Unchanged
HCl 3% aq.sol.	Unchanged



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## **Processing Care point**

### **Cleaning instructions:**

Our Diamox AR1617 film can be cleaned with a soft microfibre cloth and breath wiping. For more stubborn marks, please use a soft cloth with Ethanol or IPA.

### **Machining Instructions:**

If parts are to be machined after lamination, it is advised that the original protective film layer, provided with the Diamox AR1617 film, be removed and replaced with a low-tack protective film prior to machining, to ensure no knotting or film lifting etc.



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